

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-29. (Canceled)

1-52. (Canceled)

53. (Currently Amended) A printer configured for rendering data in an XML document according to a formatting template for printing an XML document, the formatting template comprising an XML Descriptor (XMD) associated with an each XML data element in a tree structure of the XML document, wherein each of the XMD is XML Descriptors (XMDs) are identified by an associated qualified tag, each of the qualified tags includes having a concatenation of a plurality of XML start tags representing start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element associated therewith, the XMD XMDs providing formatting to content associated with the XML data element; the printer further configured for printing the rendered XML document according to the template using the XMDs.

54. (Currently Amended) The formatting template printer of claim 53, wherein the data map comprises a chain of XML descriptors for formatting attributes if of XML data elements.

55. (Currently Amended) The ~~formatting template~~ printer of claim 53, wherein an ~~XML descriptor XML data element~~ that does not have a matching qualified tag is skipped and a next XML descriptor ~~matching a start tag having a qualified tag~~ is used in formatting the associated XML data.

56. (Previously Presented) A printing system, comprising:
a spooler for receiving printable information from the print channel;
a print services facility for parsing an XML file; and
a printer for printing the print steam according to the formatting defined by the formatting template;

wherein the formatting template includes an XML Descriptor (XMD) associated with ~~an~~ each XML data element in a tree structure of the XML document, wherein each of the XMD is XML Descriptors (XMDs) are identified by an associated qualified tag, each of the qualified tags includes having a concatenation of a plurality of XML start tags representing start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element associated therewith, the XMD XMDs providing formatting to content associated with the XML data element for printing by the printer using the XMDs.

57. (Currently Amended) The formatting template of claim 56, wherein the data map comprises a chain of XML descriptors for formatting attributes ~~if of XML data~~ elements.

58. (Currently Amended) The formatting template of claim 56, wherein the parser skips an ~~XML descriptor~~ XML data element that does not have a matching qualified tag and uses a next XML descriptor having a ~~matching start tag~~ a qualified tag to format the associated XML data.

59. (Previously Presented) The formatting template of claim 56 further comprising a buffer for storing start tags in order as the XML file is parsed.

60. (Currently Amended) A method for printing XML documents directly using a formatting template, comprising:

placing an XML document to be printed on a server spool;

parsing the XML document to identify start tags hierarchically traversed in the tree structure of the XML document to reach an XML data element;

searching a formatting template data map comprising XML descriptors XML Descriptors (XMDs) identified by an associated qualified tag having a concatenation of a plurality of XML start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element associated therewith until a qualified tag associated with an XML descriptor XML Descriptor (XMD) matches the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element;

formatting the XML data element according the XML descriptor XMD associated with the qualified tag having a concatenation of a plurality of XML start tags matching the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element;

merging the XML element associated with the XML descriptor XMD associated with the qualified tag having a concatenation of a plurality of XML start tags matching the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element to produce a formatted print data stream; and

printing ~~a~~ the XML document using the produced ~~formatted~~ print data stream formatted according to the XMDs associated with the XML data elements in the tree structure of the XML document.

61. (Currently Amended) The method of claim 60 further comprising skipping an ~~XML descriptor~~ XML data element that does not have a matching qualified tag and using a next XML descriptor ~~matching a start tag having a qualified tag~~ to format the associated XML data associated therewith.

62. (Currently Amended) An article of manufacture comprising a program storage medium readable by a computer, the medium tangibly embodying one or more programs of instructions executable by the computer to perform a method for printing XML files directly using a formatting template, the method comprising:

placing an XML document to be printed on a server spool;

parsing the XML document to identify start tags hierarchically traversed in the tree structure of the XML document to reach an XML data element;

searching a formatting template data map comprising XML descriptors XML Descriptors (XMDs) identified by an associated qualified tag having a concatenation of a plurality of XML start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element associated therewith until a qualified tag associated with an XML descriptor XML Descriptor (XMD) matches the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element;

formatting the XML data element according the XML descriptor XMD associated with the qualified tag having a concatenation of a plurality of XML start tags matching the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element;

merging the XML element associated with the XML descriptor XMD associated with the qualified tag having a concatenation of a plurality of XML start tags matching the identified start tags hierarchically traversed in the tree structure of the XML document to reach the XML data element to produce a formatted print data stream; and

printing ~~a~~ the XML document using the produced ~~formatted~~ print data stream
formatted according to the XMDs associated with the XML data elements in the tree
structure of the XML document.

63. (Currently Amended) The article of manufacture of claim 41 further comprising skipping an ~~XML descriptor~~ XML data element that does not have a matching qualified tag and using a next XML descriptor ~~matching a start tag having a qualified tag~~ to format the associated XML data associated therewith.